

ON THE POSITION OF *NOTIOPSYLLA* NOM. NOV., A
GENUS OF *SIPHONAPTERA*.

BY K. JORDAN, PH.D., AND THE HON. N. CHARLES ROTHSCHILD, M.A.

(3 text-figures.)

MR. ROBERT CUSHMAN MURPHY, of the Central Museum, Brooklyn, has sent us for identification a pair of a flea which he obtained during "the South Georgia Expedition of the Brooklyn Institute Museum and the American Museum of Natural History." The species proves to be that known as *Goniopsyllus kerguelensis*.

The name *Goniopsyllus* Baker (1905), however, cannot be employed, being preoccupied by *Goniopsyllus* Brady (1883), a genus of *Crustacea*. We therefore replace it by *Notiopsylla* nom. nov., with *kerguelensis* Taschenb. (1880) as type.

Dealing with this Siphonapteron in *Parasitology* i. p. 92 (1908), we stated that the genus was most nearly related to *Hystriehopsylla* and *Macropsylla*, and expressed the opinion that the female possibly had two receptacula seminis, as in the genera mentioned. The good state of preservation of the two specimens kindly presented by Mr. Murphy enables us to correct these statements, and to give a description and some figures supplementing those already existing.

Notiopsylla is a very near ally of the genus *Pygiopsylla* Roths. (1906), which is only known from the Eastern Hemisphere, being most abundantly represented in Australia, but also occurring in India and Africa. We have as yet no *Pygiopsylla* from South America. But the discovery of *Goniopsyllus kerguelensis* on South Georgia renders it probable that this species, or other equally close allies of *Pygiopsylla*, occur on sea-birds in Southern Patagonia and the neighbouring islands.

N. kerguelensis resembles in facies the larger species of *Pygiopsylla*, being very hairy, and has all the main characteristics of *Pygiopsylla*, but entirely lacks the pronotal comb. This deficiency is very interesting, as most species of *Pygiopsylla*, like all the species of the allied genus *Ceratophyllus*, have a well-developed comb on the pronotum, but in *Pygiopsylla cchidnae* this comb is reduced to a few spines. Its total absence in *Notiopsylla*, therefore, is a final stage in the phyletic development of that organ. We have a parallel case in the subfamily *Pulicinae*. The pronotal comb is normal in size in *Ctenocephalus*, but reduced to a few teeth in the nearly allied genus *Archaeopsylla*, while in *Pulex irritans* no trace of the comb is left.

The absence of a frontal tubercle, the position and reduction of the eye, the antennal groove closed in the female and almost closed in the male, the elongate abdominal stigmata, the two antepygial bristles on each side, the very strongly projecting pygidium, the presence of a patch of dispersed thin hairs on the inner surface of the hindcoxa, the five pairs of plantar bristles on the fifth tarsal segment, etc., are all characteristics which *Notiopsylla* shares with *Pygiopsylla*, the former being a *Pygiopsylla* without pronotal comb. It was the shape of the ninth abdominal sternite of the male which misled us to think that there was a close affinity between *Notiopsylla* and *Hystriehopsylla*. But a somewhat similar

armature also occurs among the species of *Pygiopsylla* discovered since the paper quoted above was written.

The female has only one receptaculum seminis, which is characterised by the duct not entering the head of the receptaculum at the extremity or near it, but near the tail.

***Notiopsylla kerguelensis* Tasehenb. (1880) (text-figs. 1-3).**

Head.—We figure the head of the female (text-fig. 1). That of the male differs in the upper surface being much less slanting. The frons is not really angulate, as the untenable generic name *Goniopsyllus* implies. The antennal groove extends farther upwards in the male than in the female, the antenna being longer in the male, especially the club. The bristles of the head and antenna

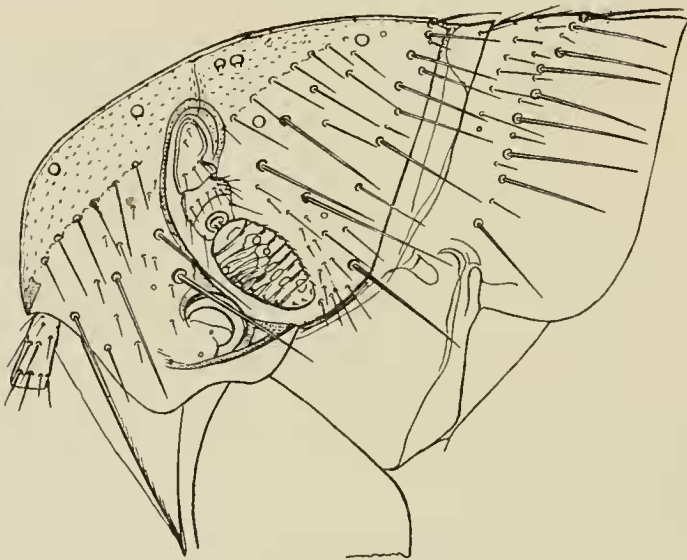


FIG. 1.—*Notiopsylla kerguelensis* ♀.

are practically the same in both sexes. The rostrum nearly reaches to the trochanter, the last segment being the longest. The maxilla is sharply pointed in a lateral view, and almost extends to the middle of the forecoxa. The first three segments of the maxillary palpus are almost of equal length, the measurements of segments I to IV being 24, 23, 18, 25.

Thorax.—The pronotum is as long as the metanotum, the mesonotum being a trifle longer. There are two rows of bristles on the pronotum, both distinctly oblique, the ventral bristles of the posterior row being antemedian and the dorsal ones postmedian. In front of these rows there are some additional dorsal bristles, which are slightly more numerous in the male than in the female. The meso- and metanota have each one row of long bristles and four to five rows of small ones. The mesopleura bear eight to ten slender bristles. The metepisternum has no bristles, whereas there are on the metasternum two in the female and four in the male, which are placed in a vertical row on the ventral two-thirds of this sclerite. The metepimerum bears twenty odd bristles arranged in four

irregular rows, three bristles of the posterior row being almost of the same size as the bristles of the posterior row of the abdominal tergites.

Abdomen.—The tergites are exceedingly hairy, there being approximately eight rows of short bristles in front of the posterior row of long ones. On the central segments at least three long bristles of the last row are placed below the stigma, besides a variable number of small ones. Segment II bears on each side one to three apical spines, segments III to VI one spine. The two antepygidial bristles of each side are very stout and rather short and obtuse. The basal sternite has only a ventral pair of bristles, besides numerous exceedingly minute hairs. The sternites of segments III to VII bear a postmedian row of long bristles, and in front of this row three or four rows of short ones, there being additional small bristles ventrally in front of these rows.

Legs.—The hindtibia bears about twenty thin short bristles on the inner surface

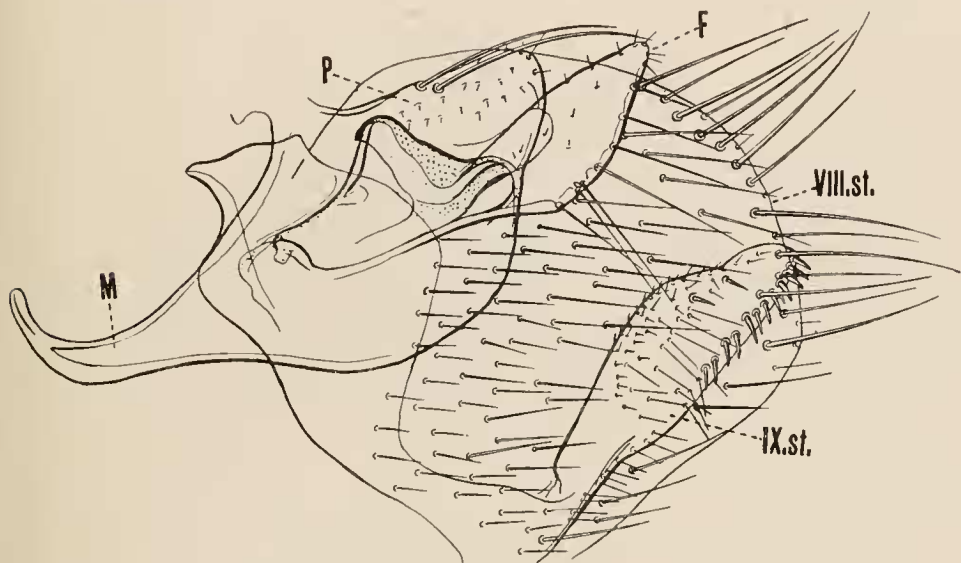


FIG. 2.—*Notiopsylla kerguelensis*.

between the anterior margin and the central vertical rod. The mid- and hind-femora have one subapical ventral bristle on the inner side, and two or three on the outer side, the row of the outer side being continued forward by four or five small bristles in the female, these additional bristles being slightly more numerous in the male. The bristles along the dorsal edge of the femora are placed far apart, but there are, as a compensation, two irregular and incomplete subdorsal rows on the outer surface of the femora. The dorsal bristles of the tibiae are very stout, the outer bristles of these pairs being very blunt, particularly those of the first and second pairs of the male. The outer surface of the tibiae, with the exception of the basal third, is almost evenly studded with bristles, the hindtibia bearing more than thirty bristles on the outer side. The tibiae and tarsi are short as compared with their width. The first foretarsal segment bears four curved bristles on the posterior side which are about as long as the second segment. The first and second segments of the hindtarsus have numerous bristles on the outer surface. The longest apical

bristle of the first hindtarsal segment almost reaches to the apex of the second segment, and the longest bristle of the latter does not quite extend to the apex of the fourth segment. The fifth segment is rather narrower than the preceding ones and has nearly straight sides. It bears five lateral plantar bristles and three apical ventral ones. Proportional lengths of the segments in the midtarsus: ♂ 30, 23, 17, 12, 26; ♀ 31, 24, 15, 11, 23; in the hindtarsus: ♂ 61, 46, 26, 18, 30; ♀ 65, 48, 25, 17, 29.

Modified Segments.—♂. The eighth sternite is very large, enveloping the genitalia (VIII. st.). It is covered with very numerous bristles (text-fig. 2), of which the apical ones are long and thick. In our figure the bristles are left out in the places where the clasper and ninth sternite shine through, as the armature of these organs would have been much obscured in our figure, if the bristles of the eighth tergite had been drawn on the top of those organs. The clasper is large and

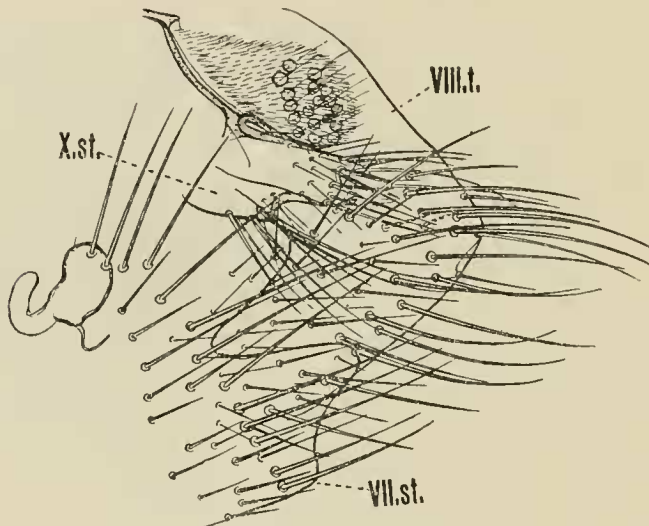


FIG. 3.—*Notinopsylla keruelensis*.

proximally produced into a rather slender, curved manubrium (M). The apex of the clasper is rounded-triangular (P) and bears a number of minute hairs and two long curved bristles, the latter being placed at the dorsal edge. The movable exopodite F is more strongly rounded ventrally than dorsally, tapering to an obtuse point. It bears seven long slender bristles along the ventral margin. The ninth sternite (IX. st.) reminds one of that of *Hystrihopsylla talpac* by the armature of the ventral arm. The outer surface of the widened portion of this ventral arm has numerous hairs, and along the ventral margin there is a row of short, stout, spiniform bristles, two similar bristles being placed on the lateral surface. The vertical arm of the ninth sternite is very wide near its apex.—♀. The seventh abdominal sternite (VII. st., text-fig. 3) is deeply sinuate (the proximal bristles of this segment are not represented in our figure). The ventral portion of the eighth tergite (VIII. st.) is rounded-triangular, as shown in the figure. It bears about twenty large bristles near the ventral margin and apex, and has, further proximally, numerous shorter and thinner bristles. There appear to be only two stout and short

lateral bristles on the inner surface of this segment. The anal sternite (X. st.) is angulate ventrally in a lateral aspect, and bears at and near this angle a bunch of bristles. The stylet is three times as long as it is wide. The head of the receptaculum seminis is about as long as the tail, but more than twice as wide.

South Georgia, on *Prion banksi* and *Larus dominicus*.

Mr. Murphy frequently saw this species of flea in the feathers of freshly killed *Prion*, and also observed them jumping about in the nest burrows of these birds.

ON A NEW FORM OF RHEA.

BY THE HON. WALTER ROTHSCHILD, F.R.S., AND CHARLES CHUBB, M.B.O.U.

Rhea americana intermedia subsp. n.

Adult.—General colour of the upper surface pale ash grey; short humeral feathers pale ash grey, the longer ones, on the outer side, grey with white bases, while those on the inner side, nearest the body, have a bluish tinge and black bases; the feathers round the bend of the wing are composed of grey, brown, and white; wing-coverts grey with white bases; outer primary quills dark brown with white bases, and edged with white at the tips, the median quills ash grey, the innermost quills also grey, becoming dark brown towards the base; interscapular region grey; the small narrow feathers on the back are dark brown with pale margins, the dark colour becoming gradually paler on the lower back and merging into the creamy white on the sides of the rump; crown of head sooty grey, with black shaft-streaks and black hair-like tips; superciliaries, sides of face, and neck all round creamy white with black shaft-lines which also have the hair-like tips, the black much more intensified on the nape where it forms a patch; chin and upper throat uniform dull white; the feathers on the lower neck are larger, the dark pattern gradually increasing in extent, and become uniform black on the basal portion of the neck and sides of the upper breast; middle of upper breast also black with some pearl-grey feathers intermixed; sides of the body, thighs, and remainder of the upper surface buffy white. Exposed portion of culmen 87 mm., length of neck 380, tarsus 307, middle-toe and claw 129.

Hub.—Barra San Juan, Colonia Uruguay. Type in collection of Duc d'Orléans.

COMPARATIVE KEY.

- a. Interscapular region dark brown; neck dull white; tarsus 305 mm.; middle-toe and claw 117 mm. . . . *R. americana americana*, North Brazil.
- b. Interscapular region ash grey; neck buffy white; tarsus 307 mm.; middle-toe and claw 129 mm. . . . *R. americana intermedia*, South Brazil, Uruguay.
- c. Interscapular region black; neck for the most part black; tarsus 337 mm.; middle-toe and claw 150 mm. . . . *R. americana rothschildi*, Argentina.